Virtual Temperature

- Formula
- Source

Description

Calculate the virtual temperature T_v(K) from temperature T(C), pressure P(mb) and relative humidity rh(%).

$E_{sw}(P,T)$ (/aspendocs/form_esw_hardy.html) is the Hardy equation for saturation vapor pressure.

Used in Aspen starting with V3.4.5.

Formula

$$T_v = \frac{T + 273.15}{1 - h2omr * (1 - \eta)}$$

where:

$$h2omr = \frac{e}{P - e}$$

$$e = E_{sw} * (\frac{rh}{100})$$

$$\eta = \frac{mh2o}{mdry}$$

$$mh2o = 18.105(g)$$

$$mdry = 28.966(g)$$

Source

Wikipedia

Edit me

Tags: formulas (tag_formulas.html)

(mailto:eol-aspen@ucar.edu)